



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/671,742	09/29/2000	Takashi Saito	001215	2058
23850	7590	08/19/2003		
ARMSTRONG, WESTERMAN & HATTORI, LLP 1725 K STREET, NW SUITE 1000 WASHINGTON, DC 20006			EXAMINER	ZIMMERMAN, GLENN
			ART UNIT	PAPER NUMBER
			2879	
DATE MAILED: 08/19/2003				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/671,742	SAITO ET AL.
Examiner	Art Unit	
Glenn Zimmerman	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on June 24, 2003.
- 2a) This action is FINAL.
- 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 2,3,5 and 6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 6 is/are allowed.
- 6) Claim(s) 2,3 and 5 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on May 20, 2003 is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____	6) <input type="checkbox"/> Other: _____

**DETAILED ACTION**

***Response to Amendment***

Amendment, filed on June 24, 2003, has been entered and acknowledged by the examiner.

***Drawings***

The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on May 20, 2003 has been approved.

***Election/Restrictions***

Applicant's election without traverse of Claim 7 in Paper No. 5 is acknowledged.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 2 is it is unclear what frequency band that the wording "electromagnetic energy" refers to, which leaves the claim indefinite.

A 112 2<sup>nd</sup> paragraph rejection has been determined for claim 2, as written about above. However, a further evaluation of the claim will be done while interpreting "electromagnetic energy" in line 11 as "visible electromagnetic energy".

Claims 3 and 5 are rejected for depending from a rejected claim.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seats et al. U.S. Patent 5,663,611 in view of Sano U.S. Patent 5,182,489 in view of Naito U.S. Patent 6,091,469.

Regarding claim 2, Seats et al. teach a plasma display device (**title**) comprising a display module (**Fig. 1 and 2**), the display module having electronics (**drive unit ref. 30**) mounted to the back surface thereof and utilizing the front surface thereof as a display surface, the display module further comprising:

a back surface glass plate (**lower glass plate ref. 11**) having discharge electrodes (**molybdenum lower electrodes ref. 21**);

a front surface glass plate (**upper glass plate ref. 10**) that is mounted on and opposing to the back surface glass plate via separation walls (**parallel walls ref. 13**) and having discharge electrodes (**upper electrodes ref. 20**); and

luminescent pixels (**cells Fig. 1 ref. 2**) defined by the back surface glass plate, the separation walls and the front surface glass plate; but fails to teach wherein the luminescent pixels are formed so that at least the surface of the back surface glass plate opposite and facing the display surface is a reflection surface comprised of metal plating which reflects all wavelengths of visible light and visible electromagnetic energy away from the back surface glass plate. Sano in the analogous art teaches wherein the luminescent pixels are formed so that at least the surface of the back surface glass plate opposite and facing the display surface is a reflection surface comprised of metal (**evaporated aluminum film Fig. 5 ref. 30; evaporating aluminum is a known method of plating**) which reflects all wavelengths of visible light and visible electromagnetic energy away from the back surface glass plate (**Fig. 5 ref. 30; col. 6 lines 62-64; col. 7 lines 1-3**). Naito in the analogous art teaches Metal Plating (**col. 5 lines 65-67; col. 6 line 1**). Additionally, Sano teaches incorporation of such a reflection surface to improve reflecting of phosphor emitted light toward the first insulating substrate which is the display direction (**Fig. 5; col. 7 lines 11-13**). Additionally, Naito teaches incorporation of such a metal plating to improve the structure by providing an alternative form of creating a mirror-finishing in a display (**col. 5 lines 65-67**).

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use the reflection surface in the plasma display panel of Seats et al. since such a modification would improve reflecting of light emitted by the phosphors toward the first insulating substrate which is the display direction as taught by Sano.

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use metal plating in reflection layer/coating of Seats et al and Sano since such a modification would improve the reflection surface by providing a mirror-finishing as taught by Naito.

Claims 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seats et al. U.S. Patent 5,663,611 in view of Sano U.S. Patent 5,182,489 and Naito U.S. Patent 6,091,469 and the Applicant's Admitted Prior Art.

Regarding claim 3, Seats et al., Sano and Naito teach all the limitations of claim 3, but fails to teach the surface of the front surface glass plate is not a reflection surface. The Applicant's Admitted Prior Art teach the surface of the front surface glass plate is not a reflection surface (**dielectric layer Fig. 6 ref. 19**). Additionally, The Applicant's admitted prior art teaches incorporation of such a surface glass plate not a reflection surface to improve the display by allowing for pixel visibility for the display viewer and this is also conventional (**dielectric layer Fig. 6 ref. 19; page 2 lines 1-10**).

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have the surface of the front surface glass plate is not a reflection surface in the of display of Seats et al., Sano and Naito since such a modification would improve the display by allowing for pixel visibility for the display view as taught by The Applicant's Admitted Prior Art and this is also conventional.

Claims 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seats et al. U.S. Patent 5,663,611 in view of Sano U.S. Patent 5,182,489, Naito U.S. Patent 6,091,469 and Choi et al. U.S. Patent 6,051,928.

Regarding claim 3 Seats et al., Sano and Naito teach all the limitations of claim 3, but fail to teach other than the surface of the front surface glass plate are reflection surfaces. Choi et al. in the analogous art teach that the surface of the front surface glass plate is not a reflection surface (**front glass substrate and a plurality of anodes Fig. 4 refs. 31 and 32 respectively**). Additionally, Choi et al. teaches incorporation of such a surface glass plate not a reflection surface to improve the display by allowing for display visibility for the display viewer (**abstract**) and this would be conventional.

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use a surface of the front surface glass plate is not a reflection surface in the display of Seats et al., Sano and Naito since such a modification would improve the display by allow for display visibility for the display viewer as taught by Choi et al. and this would also be conventional.

Claims 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seats et al. U.S. Patent 5,663,611 in view of Sano U.S. Patent 5,182,489, Naito U.S. Patent 6,091,469 and Washizuka et al. U.S. Patent 4,192,060.

Regarding claim 5, Seats et al., Sano and Naito teach all the limitations of claim 5, but fail to teach a reflection surface formed by metal leafs. Washizuka et al. in the analogous art teaches a reflection surface formed by metal leafs (**col. 9 lines 10, 11 and 21-24, 32**). Additionally, Washizuka et al. teaches incorporation of such a

reflection surface made of metal leafs to improve the structure by providing a good light reflecting effects (col. 9 line 15).

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use metal leaf in reflection surface of Seats et al., Sano and Naito since such a modification would improve light reflecting effects as taught by Washizuka et al.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seats et al. U.S. Patent 5,663,611 in view of ITO EP 0 908 919 A1 and Naito U.S. Patent 6,091,469.

Regarding claim 2, Seats et al. teach a plasma display device (**title**) comprising a display module (**Fig. 1 and 2**), the display module having electronics (**drive unit ref. 30**) mounted to the back surface thereof and utilizing the front surface thereof as a display surface, the display module further comprising:

a back surface glass plate (**lower glass plate ref. 11**) having discharge electrodes (**molybdenum lower electrodes ref. 21**);

a front surface glass plate (**upper glass plate ref. 10**) that is mounted on and opposing to the back surface glass plate via separation walls (**parallel walls ref. 13**) and having discharge electrodes (**upper electrodes ref. 20**); and

luminescent pixels (**cells Fig. 1 ref. 2**) defined by the back surface glass plate, the separation walls and the front surface glass plate; but fails to teach wherein the luminescent pixels are formed so that at least the surface of the back surface glass plate opposite and facing the display surface is a reflection surface comprised of metal

plating which reflects all wavelengths of visible light and visible electromagnetic energy away from the back surface glass plate. ITO in the analogous art teaches wherein the luminescent pixels are formed so that at least the surface of the back surface glass plate opposite and facing the display surface is a reflection surface comprised of metal which reflects all wavelengths of visible light and visible electromagnetic energy away from the back surface glass plate (**paragraph 67**). Naito in the analogous art teaches Metal Plating (**col. 5 lines 65-67; col. 6 line 1**). Additionally, ITO teaches incorporation of such a reflection surface to improve reflecting of phosphor emitted light toward the first insulating substrate which is the display direction (**page 8 line 27**). Additionally, Naito teaches incorporation of such a metal plating to improve the structure by providing an alternative form of creating a mirror-finishing in a display (**col. 5 lines 65-67**).

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use the reflection surface in the plasma display panel of Seats et al. since such a modification would improve reflecting of light emitted by the phosphors toward the first insulating substrate which is the display direction as taught by ITO.

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use metal plating in reflection layer/coating of Seats et al and ITO since such a modification would improve the reflection surface by providing a mirror-finishing as taught by Naito.

Claims 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seats et al. U.S. Patent 5,663,611 in view of ITO EP 0 908 919 A1, Naito U.S. Patent 6,091,469 and the Applicant's Admitted Prior Art.

Regarding claim 3, Seats et al., ITO and Naito teach all the limitations of claim 3, but fail to teach the surface of the front surface glass plate is not a reflection surface. The Applicant's Admitted Prior Art teach the surface of the front surface glass plate is not a reflection surface (**dielectric layer Fig. 6 ref. 19**). Additionally, The Applicant's admitted prior art teaches incorporation of such a surface glass plate not a reflection surface to improve the display by allowing for pixel visibility for the display viewer (**dielectric layer Fig. 6 ref. 19; page 2 lines 1-10**) and this is also conventional.

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have the surface of the front surface glass plate is not a reflection surface in the display of Seats et al., ITO and Naito since such a modification would improve the display by allowing for pixel visibility for the display view as taught by The Applicant's Admitted Prior Art and this is also conventional.

Claims 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seats et al. U.S. Patent 5,663,611 in view of ITO EP 0 908 919 A1, Naito U.S. Patent 6,091,469 and Choi et al. U.S. Patent 6,051,928.

Regarding claim 3 Seats et al., ITO and Naito teach all the limitations of claim 3, but fail to teach other than the surface of the front surface glass plate are reflection surfaces. Choi et al. in the analogous art teach that the surface of the front surface glass plate is not a reflection surface (**front glass substrate and a plurality of anodes**

**Fig. 4 refs. 31 and 32 respectively).** Additionally, Choi et al. teaches incorporation of such a surface glass plate not a reflection surface to improve the display by allowing for display visibility for the display viewer (**abstract**) and this would be conventional.

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use a surface of the front surface glass plate is not a reflection surface in the display of Seats et al., ITO and Naito since such a modification would improve the display by allow for display visibility for the display viewer as taught by Choi et al. and this would also be conventional.

Claims 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seats et al. U.S. Patent 5,663,611 in view of ITO EP 0 908 919 A1, Naito U.S. Patent 6,091,469 and Washizuka et al. U.S. Patent 4,192,060.

Regarding claim 5, Seats et al., Sano and Naito teach all the limitations of claim 5, but fail to teach a reflection surface formed by metal leafs. Washizuka et al. in the analogous art teaches a reflection surface formed by metal leafs (**col. 9 lines 10, 11 and 21-24, 32**). Additionally, Washizuka et al. teaches incorporation of such a reflection surface made of metal leafs to improve the structure by providing a good light reflecting effects (**col. 9 line 15**).

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use metal leaf in reflection surface of Seats et al., ITO and Naito since such a modification would improve light reflecting effects as taught by Washizuka et al.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sano U.S. Patent 5,182,489 in view of Ookura Japanese Patent Publication 10-293541 and Naito U.S. Patent 6,091,469.

Regarding claim 2, Sano teaches a plasma display device (**title**) comprising a display module (**Fig. 5**), and utilizing the front surface thereof as a display surface, the display module further comprising:

A back surface glass plate (**soda glass second insulating substrate ref. 12**) having discharge electrodes (**column electrode ref. 16**);

A front surface glass plate (**soda glass first insulating substrate ref. 10**) that is mounted on and opposing to the back surface glass plate via separation walls (**partition wall ref. 22**) and having discharge electrodes (**row electrode ref. 14**); and

Luminescent pixels (**ref. 24**) defined by the back surface glass plate, the separation walls and the front surface glass plate;

Wherein the luminescent pixels are formed so that at least the surface of the back surface glass plate opposite the display surface is a reflection surface (**aluminum reflector ref. 30**) comprised of metal which reflects all wavelengths of visible light and visible electromagnetic energy away from the back surface glass plate (**col. 7 lines 1-3**), but fail to teach the display module having electronics mounted to the back surface thereof and metal plating. Ookura in the analogous art teach the display module having electronics mounted to the back surface thereof (**PDP unit and control circuit substrate ref. 3 and 5**). Naito in the analogous art teaches metal plating (**col. 5 lines 65-67; col. 6 line 1**). Additionally, Ookura teaches incorporation of such a display

module having electronics mounted to the back surface thereof to improve the shortness of the plasma display panel (**detailed description paragraph 2**). Additionally, Naito teaches incorporation of such a metal plating to improve the structure by providing an alternative form of creating a mirror-finishing in a display (**col. 5 lines 65-67**).

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have the electronics mounted to the back surface of the display module in the plasma display of Sano since such a modification would improve shortness of the plasma display as taught by Ookura.

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use metal plating in reflection layer/coating of Sano since such a modification would improve the reflection surface by providing a mirror-finishing as taught by Naito.

#### **Allowable Subject Matter**

Claim 6 is allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 6, the following is an examiner's statement of reasons for allowance: The prior art of record neither shows nor suggests a plasma display device including the combination of all the limitations as set forth in claim 6, and specifically wherein the reflection surface opposite the display surface has a concave surface, and

the light reflected from the reflection surface is condensed at the display surface, electronics mounted to the back surface of a display module along with plain meaning of reflection surface could not be found elsewhere in prior art.

***Conclusion***

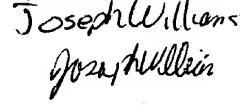
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Schimizu et al. U.S. Patent 4,569,891 discloses Photoconductive Material. Schimizu et al. discloses in '891 that evaporation of aluminum is a known method of plating (col. 4 lines 64-65).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenn Zimmerman whose telephone number is (703) 308-8991. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (703) 305-4794. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7382 for regular communications and (703) 308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is n/a.

  
Glenn Zimmerman  
August 9, 2003

  
Joseph Williams  
Joseph Williams